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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,686	03/27/2006	Koetsu Saito	L8638.06105	7158
52989	7590	07/13/2009		
Dickinson Wright PLLC James E. Ledbetter, Esq. International Square 1875 Eye Street, N.W., Suite 1200 Washington, DC 20006			EXAMINER GORDON, BRYAN P	
			ART UNIT 2837	PAPER NUMBER
			MAIL DATE 07/13/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/573,686	Applicant(s) SAITO ET AL.	
	Examiner BRYAN P. GORDON	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 3-4, 6-8 and 10-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 5, 9 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 23 June 2009 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito (US PN 20060255686) and in view of Jaster (US PN 5,545,942).

6. Considering claim 1, Saito (Figure 2) teaches an ultrasonic probe comprising: a piezoelectric element (1) for transmitting and receiving ultrasonic waves (abstract), said piezoelectric element having a ground electrode (2) and a first signal electrode (3) on both surfaces thereof respectively; a second signal electrode (4) electrically connected to said first signal electrode and a backing load member (5) placed on a rear surface of said piezoelectric elements.

However, Saito does not teach a heat conduction material which is placed inside said backing load member and which includes a thermal conductivity greater than a thermal conductivity of said backing load member, said heat conduction material being provided separately from said second signal electrode.

In the same field of endeavor, Jaster (Figure 2) teaches a heat conduction material (22) which is placed inside said backing load member (26) and which includes a thermal conductivity greater than a thermal conductivity of said backing load member (col. 4 lines 20-35), said heat conduction material being provided separately from said

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second signal electrode (22 is a heat sink or conductor so therefore it is separate from the signal electrode).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to use the heat conduction material of Jaster with Saito's device since Jaster's device uses the heat conduction material to improve the heat dissipation of the ultrasonic probe to direct the heat away from the patient being examine, which is a common goal of Saito's device.

7. Considering claim 2, Saito in view of Jaster teaches the claimed invention as described above in claim 1. Saito also teaches the plurality of piezoelectric elements which are arrayed in one direction (abstract).

8. Claims 5, 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito (US PN 20060255686), in view of Jaster (US PN 5,545,942) and in view of Takayoshi (JP 2000165995).

9. Considering claim 5, Saito in view of Jaster does not teach a heat radiating block which is connected to said heat conduction material and whose thermal conductivity is greater than the thermal conductivity of said backing load member.

In the same field of endeavor, Takayoshi teaches a heat radiating block which is connected to said heat conduction material and whose thermal conductivity is greater than the thermal conductivity of said backing load member (paragraph 0047).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to include the heat radiating block which is connected to said heat conduction material and whose thermal conductivity is greater than the thermal

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conductivity of said backing load member of Takayoshi with the combination above to help dissipate the heat produced in the device away from the ultrasonic probe which reduces the skin temperature of the probe.

10. Considering claims 9 and 13, Takayoshi teaches wherein said heat conduction material, any material of PGS graphite sheet with high degree of orientation where polymeric film is graphitized, graphite, carbon nano-tube, aluminum nitride, boron nitride, silicon carbide, beryllium oxide, copper and aluminum is used (paragraph 0019).

Response to Arguments

11. Applicant's arguments with respect to claims 1 and 2 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRYAN P. GORDON whose telephone number is (571)272-5394. The examiner can normally be reached on Monday-Thursday 8:00-5:30, Friday 7:30-4:00.

13. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Benson can be reached on 571-272-2227. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bryan P Gordon/

Examiner, Art Unit 2834

/Walter Benson/

Supervisory Patent Examiner, Art Unit 2837